

- A, air pump
- C, growing culture
- D, air exit port
- F, filter
- G, gang valve
- H, water humidification flask
- I, input chamber
- K, heating tape
- M, fresh medium
- O, siphon
- P, peristaltic pump
- W, waste

FIGURE 1A



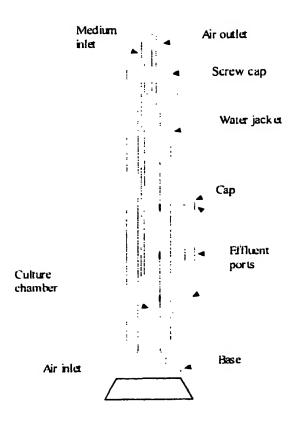


FIGURE 1B

Figure 2

Directed Evolution of the Quinolone-Resistance Determinant Region
(QRDR) of the gyrA Gene Sequence of E. coli\*

	G <sup>11</sup> D <sup>12</sup> S <sup>13</sup> D <sup>17</sup>
E.coli 11775(WT)	E. coli 11775(WT) PTGGTGACGTAATCGGTAAATACCATCCCCCATGGTGACTCTATGACACGATCGTCGTCGTATGGCGCATTCTCGCTGCGTTACATGCTGGTAGACGGTC
NX-E09	TIGITANCO PATICIGITA ATA CCATICCICATIGITA POR COCCOTITATA I CATICO TICO GO COCATICITO GO COCTITA CATICO STAGA CO GO
NX-E10	TIGGIGACGIAAICGGIAAAIACCAICCCCAIGGIGACHTEGCGGITHAFSACACGAICGICCGIAIGSCGCASCCAITCICGCTECGTACAISCIGGIAGACGGIC
NX-N6	TTGGIGACGTAATCGGTAAATACCATCCCCATGGTGACTTGGCGGGTTTATGACACGATCGTCCGTATGGCGCACCCATTCTCGCTGCGTTACATGCTGGTAGACGGTC
NX-M3	TIGGICACGIAATCGGIAAATACCATCCCCATGGIGALITCGCCGGTTTATGGCACCATCGITCGGTCGTATGGCGCAGCCATTCTCGCTGCGTTACATGCTGGTAGAGGGTC
NX-M5	TIGGIGACGI AAICGGIAAAIACCAICCCCAISGIGA2ICGGCGGIIIATAACACGAICGICCGIAIGGCGCAGCCAIICICGCIGCGIIACAIGCIGGIAGACGGIC
NX-M6	TIGGIGACGTAATCGGTAAATACCATCCCCAIGGJGAC1CGGCGGTTTAT3GCACGA;CGTCCGTATGGCGCAGCCATTCTCGCTGCGTTACATGCTGGTAGACGGTC
D7NX-E1	TIGGIGACGIAATCGGIAAATACCATCCCCATGGTGACTTTATTACACGATCGTCCGTATGGCGCAGCCATTCTCGCTGCGTACATCTGCGGC
D7NX-E2	TTGGTGACGTAATCGSTAAATACCATCCCCATGGTGAGTTTATTAATGACGCATCCGTATGGCGCAGCCATTCTCGCTGCGTTACATGCTGGTAGACGGTC
D3NX-E5	TIGGIGACGTAATCGGTAAATACCATCCCCATGGTGACTTGGCGGTTTATSACACGATCGTCCGTGGGGCGCCATTCTCGCTGCGTTACATGCTGGTAGACGGTC
D3NX-E6	TTGGTGACGTAATCGGTAAATACCATCCCCATGGTGACTTGGCGGTTTATSACACGATCGTCGTATGGCGCAGCCATTCTCGCTGCGTTACATGCTGGTAGATGGTT
D2C2-a	TTGGTGACGIAATCGGTAAATACCATCCCCATTGIGACTCCGCGGTTTATISACACGATCCTCCSTATGGCGCAGCCATTCTCGCTGCGTTACATGCTGGTAGACGGTC
D2C2-h	TEGGTGACGIAATCGGJAAATACCATCCCCAJIGTGACTCGGCGGTTJATSACACGAICCSCTGCCGCCGCCCATTCTCGCTGCGTTACATGCTGGTAGACGGTC
D2C2.1	TTGGIGACGTAATCGGTAAATACCATCCCCATGGTAACTCCGGGGTTTATSACACGATCGTCCTTATGGCGCAGCCATTCTCGCTGGGTTACATGCTGGTAGACGGTC

Single or double base pair point mutations are shown in blue letters and the mis-matching bases are shown in red letters. \* G = Glycine, D = Aspartic Acid, S = serine (amino acid positions ae numbered as superscripts).